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ABSTRACT

This study examined children's speech to other children who varied in facial maturity. Subjects were 20 children, aged 48 to 68 months, who were randomly assigned to see drawings of either a "babyfaced" or "maturefaced" child. Subjects were shown the picture and told that the child in the picture was 3 years old; subjects were then instructed to tell the child in the picture how to make a sandwich. All directions given by the subject were tape-recorded and analyzed for several measures, including the number of nouns and the amount of "baby talk" used. Results indicated that the younger children in the subject group used more baby talk and more nouns when talking to babyfaced children than when talking to maturefaced children. Contrary to findings of previous studies, noun use was not negatively related to verb use, and noun use was more prevalent in speech to babyfaced than maturefaced target children. (MM)

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Children's Use of Babytalk in Response to Target Facial Maturity

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Running Head: CHILDREN'S BABYTALK

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Poster presented through the Committee for Equality in Professional Opportunity at the Southeastern Psychological Association, March, 1993, Atlanta, GA. The order of the first two authors' names was determined alphabetically. The authors are grateful to all of the children who participated in the study, to Dr. Robert Bloodworth of the China Grove Elementary School, to Dianne Safrit of the after-school daycare program, to Susan Clingenpeel for her sketches of the children, and to Celeste Carter and Jane Copley for their clerical assistance. Correspondence should be addressed to the third author at the Department of Psychology, Catawba College, Salisbury, NC 28144.

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Rationale:

"Babytalk" is used to communicate with many different types of people: Children, foreigners, the retarded (DePaulo & Coleman, 1986), and the elderly (Ryan, Giles, Bartolucci, & Henwood, 1986). Babytalk incorporates the use of slow speech, exaggerated tones, common vocabulary, high pitch, simplified consonants, exceptional clarity, repetitions, questions, and short, simple sentences (Brown, 1977). Such vocalizations are used when a speaker believes that a listener is unable to understand the language, when the listener is judged to be cognitively incapable of understanding (Cross, 1977), or when the target of the speech inspires affection (Brown, 1977). The use of babytalk is found even in children, who tend to adjust their speech when talking to younger siblings (Dunn & Kendrick, 1982).

Judgments of the cognitive capacity of others is influenced by a number of factors. Age is one such factor, as babytalk is directed toward children and the elderly, both of whom are seen as less capable of understanding. However, judgments of others' abilities is also affected by physical appearance factors that are independent of age. Babyfaced people are perceived to be naive and incapable, whereas their maturefaced peers are seen as shrewd and able (Berry & Brownlow, 1989; Berry & McArthur, 1985; Zebrowitz & Montepare, 1992). Facial maturity also influences use of babytalk, as adults adjust their speech when addressing children who vary in babyishness (Zebrowitz, Brownlow, and Olson,1992). Adults clarify and simplify their utterances more often when talking to babyfaced children than when talking to maturefaced children, and also speak in higher and more variable tones when addressing youngsters who looked babyish.

Given that children modify their vocalizations when addressing children younger than themselves, and that adults modify their vocalizations in response to a listener's

facial maturity, the present study examined children's use of babytalk to other children who varied in facial maturity. We predicted that children would modify their vocalizations depending of the facial maturity of the target of their speech in the same manner as adults.

Method:

Stimuli. Two children's faces, each about 7 in. X 6 in., were drawn in black and white. The artist made each face unisex by covering the head with a cloak, obscuring all but a few wisps of hair, and was told to draw a child that looked about three-years old. Following physiognomic descriptions of baby and mature faces (cf. Berry & McArthur, 1986; McArthur & Apatow, 1983/1984; Zebrowitz & Montepare, 1992), the artist manipulated the features on one face to be babyish by depicting large, round eyes, a large nose bridge, round cheeks, and by placing the features low on the face. The other picture was manipulated as mature with a narrow nose bridge, small eyes, and defined cheek and chin shape. Pretesting with adult subjects revealed that the face drawn as mature was indeed significantly more mature than the face drawn as babyish, but that both faces were equally attractive. However, the mature face was seen as older than the babyish face. To circumvent the problem of differential age judgments due to differences in facial maturity, child-subjects in the main part of the study were told the age of the child in the picture.

Subjects. Twenty children (10 male, 10 female; mean age = 53 months, from a range of 48 to 68 months) were recruited from local preschools to participate in the study. Parental permission was obtained for each.

Procedure. Children within each sex were randomly assigned to see either the babyfaced or maturefaced child. Each was seated in front of the picture, displayed in a

standard picture frame, and was told that the child in the picture was three-years old and did not know how to make a sandwich. Each child was then shown a three-minute sand timer, and was shown the function of the timer, i.e., the timer told the child how long he or she could take to talk to the child in the picture. After determining that the child understood the task, the child was then told to start the sandwich directions, and a tape recorder (placed near the child) was started. To collect information about the manipulation check, the child was then asked how much the child in the picture looked like a baby from three given choices: "looks a lot like a baby", "looks a little like a baby", and "doesn't look like a baby at all".

Linguistic and paralinguistic measures of speech. The children's dialogues were spliced into 12 to 18 s segments onto a tape, leaving 10 s between each. The clips were taken off the end of the dialogues, and were made 12 to 18 s because some children talked for only a very short period of time. Fifteen undergraduates used five-point bipolar scales to judge the spliced dialogues, rating each on the dimensions of pitch, loudness, speed, speech sophistication, and amount of babytalk. These judgments were reliable (alphas ranged from .83 to .93), and thus a mean rating for each linguistic measure was calculated for each child's speech.

Linguistic measures were obtained from written transcripts made from the children's dialogues, and were chosen based on findings from previous research (cf. Zebrowitz et al., 1992), although some measures collected in previous studies were omitted due to time and equipment restraints on collecting them. The linguistic measures included 1) Clarification (a composite of time of interaction, number of words, and number of sentences used, calculated in z scores), 2) Timing (speech rate [words/time] and average p selength, calculated in z scores), 3) number of verbs, 4) number of nouns, and 5) a Linguistic Babytalk Composite (Timing, Clarifying, plus

verbs, in z scores).

The measures comprising Clarification reached a high level of internal consistency (coefficient alpha = .87), although the measures in timing reached only an acceptable level of internal consistency, $r(18) = .41$, $p = .10$. According to previous research, nouns and verbs should have been negatively correlated, but were positively correlated here, $r(18) = .70$, $p < .001$; thus each was examined separately. Because noun use was positively correlated with verb use, it was not included in the Linguistic Babytalk Composite.

Results:

Overview. Because of the large age range of the children involved in the study (20 months), child-subjects were divided into two groups based on a median split of their ages. This grouping was used as a two-level factor, along with child sex and type of face seen, to form a 2 (Subject Age) X 2 (Subject Sex) X 2 (Face Type) between-subjects design. Each dependent measure was then separately entered into an ANOVA, and Scheffé tests (alpha = .05) were used to examine group differences.

Manipulation Check. The ANOVA for judgments of the how much each face looked like a baby revealed no significant main or interactive effects, all Fs$(1, 12) \leq 3.16$, ns. Thus, the manipulation was either not successful, or the children could not articulate whether the target children depicted in the pictures varied with respect to babyishness.

Linguistic Measures. Children used significantly more nouns with babyfaced targets ($M = 7.70$) than with maturefaced targets ($M = 4.30$), $F(1, 12) = 7.51$, $p < .02$, and, as predicted, considerably more Linguistic Babytalk with babyfaced targets ($M = .73$) than with maturefaced targets ($M = -.73$), $F(1, 12) = 4.94$, $p < .05$. Both face main

effects were qualified by an interaction with age, both Fs(1, 12) $\geq$ 5.02, both ps < .05. Younger children used more nouns with babyfaced targets (M = 9.17) than with maturefaced targets (M = 1.50), however, the older children made no such discrimination (Ms = 5.50 and 6.17). This interaction is depicted in Figure 1. Younger children also used more Linguistic Babytalk to the babyfaced targets (M = -1.38) than to maturefaced targets (M = 1.38), but older children did not significantly differentiate their speech based on facial maturity (Ms = -.71 and -.29, respectively). This interaction is depicted in Figure 2.

Babyfaced targets were the recipients of slightly more Clarifying (M = .32) and verbs (M = 6.90) than were maturefaced targets (Ms = -.32 and 4.70 respectively), both Fs(1, 12) $\geq$ 2.40, both ps $\leq$ .15. No significant effect of facial maturity was revealed on the Timing measure, F < 1, ns.

Paralinguistic Measures. Each paralinguistic measure was separately entered into 2 (Subject Age) X 2 (Subject Sex) X 2 (Face Type) ANOVAs. Only one linguistic measure, pitch, revealed a trend, F (1, 12) = 2.68, p = .13. As was expected, a somewhat higher pitch was used with babyfaced targets (M = 5.53) than with maturefaced targets (M = 4.68).

Implications:

The results of this study indicated that children used more babytalk and more nouns when talking to babyfaced children rather than maturefaced children, although this pattern was found for only younger children. As the children in the pictures were judged to be of significantly different ages, it is possible that the younger children were responding to how old the target child looked, rather than to how babyfaced the child looked, but that the older children were capable of remembering the stated age of the

child and reacted accordingly. Because judgments of the age of the targets were not collected, it is impossible to know whether the older children were able to remember the target's age and the younger children were not. On the other hand, babyfaced targets were instructed using a slightly higher pitch, somewhat more clarification, and marginally more verbs, and none of these effects were qualified by age of subject. Perhaps with a larger sample size the impact of target facial maturity on children's use of babytalk independent of perceived age of target may become more clear.

Contrary to previous findings (i.e., DePaulo & Coleman, 1986; Zebrowitz et al., 1992), noun use was not negatively related to verb use, and noun use was more prevalent with babyfaced targets rather than maturefaced targets. It is possible that the lack of linguistic sophistication of the subjects is responsible for this finding, as children have a rather limited vocabulary in which nouns predominate, and it was primarily the younger children in this study who used a lot of nouns to babyfaced targets. Also odd was the finding that the children were not able to say that the target child designated as babyish was babyfaced. It is possible that the children were being literal in their responses in that the young child in the picture did not look like an infant per se. As well, adult subjects in the pretest had both pictures to examine, and could thus make comparative judgments of the pictures. Although the children could not say that one child depicted was babyish and the other mature, they did alter their vocalizations differentially based on the physical appearance of the target, directing somewhat more babyish talk to the child that looked more in need of help in understanding.

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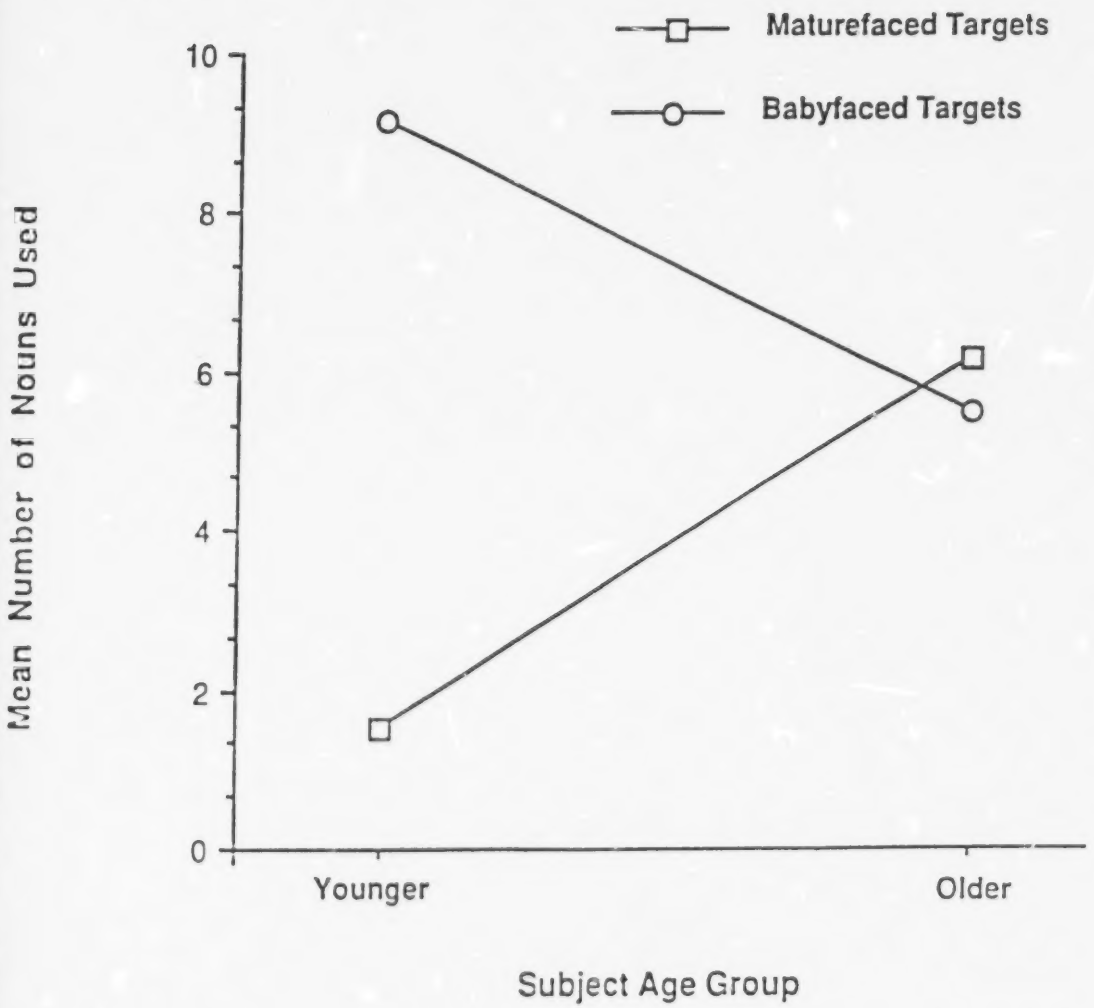

Figure 1. Noun Usage as a Function of Subject Age and Target Facial Maturity

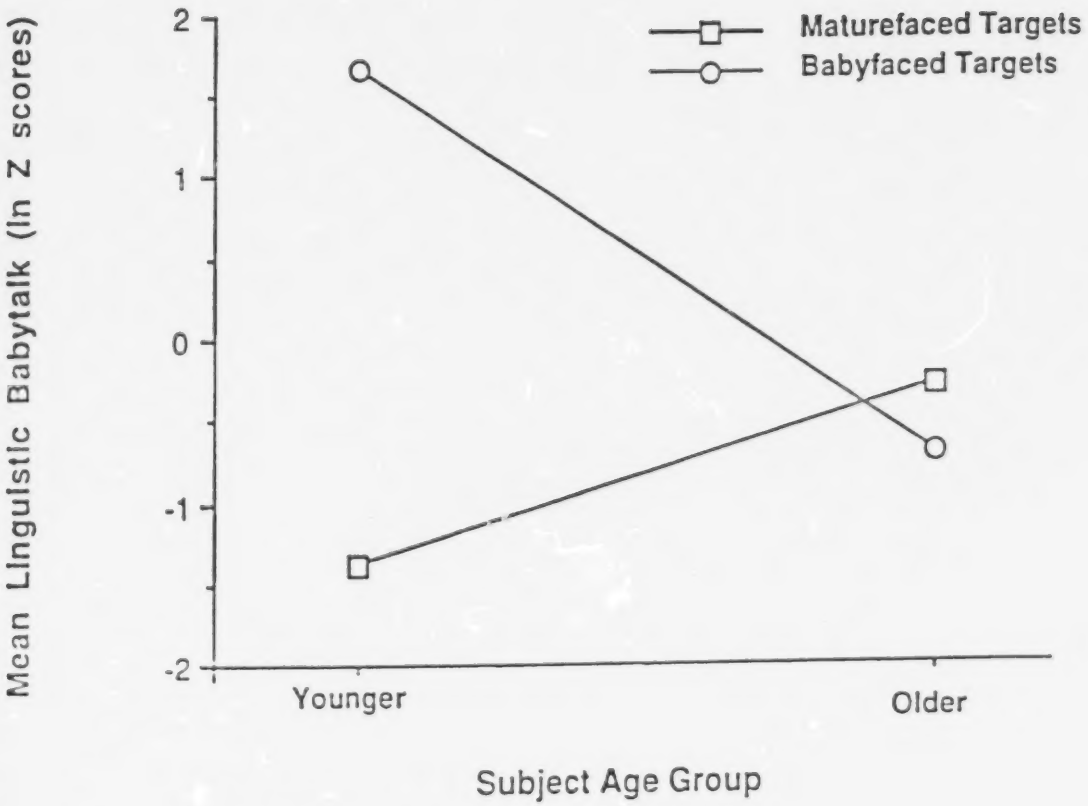

Figure 2. Linguistic Babytalk as a Function of Subject Age and Target Facial Maturity